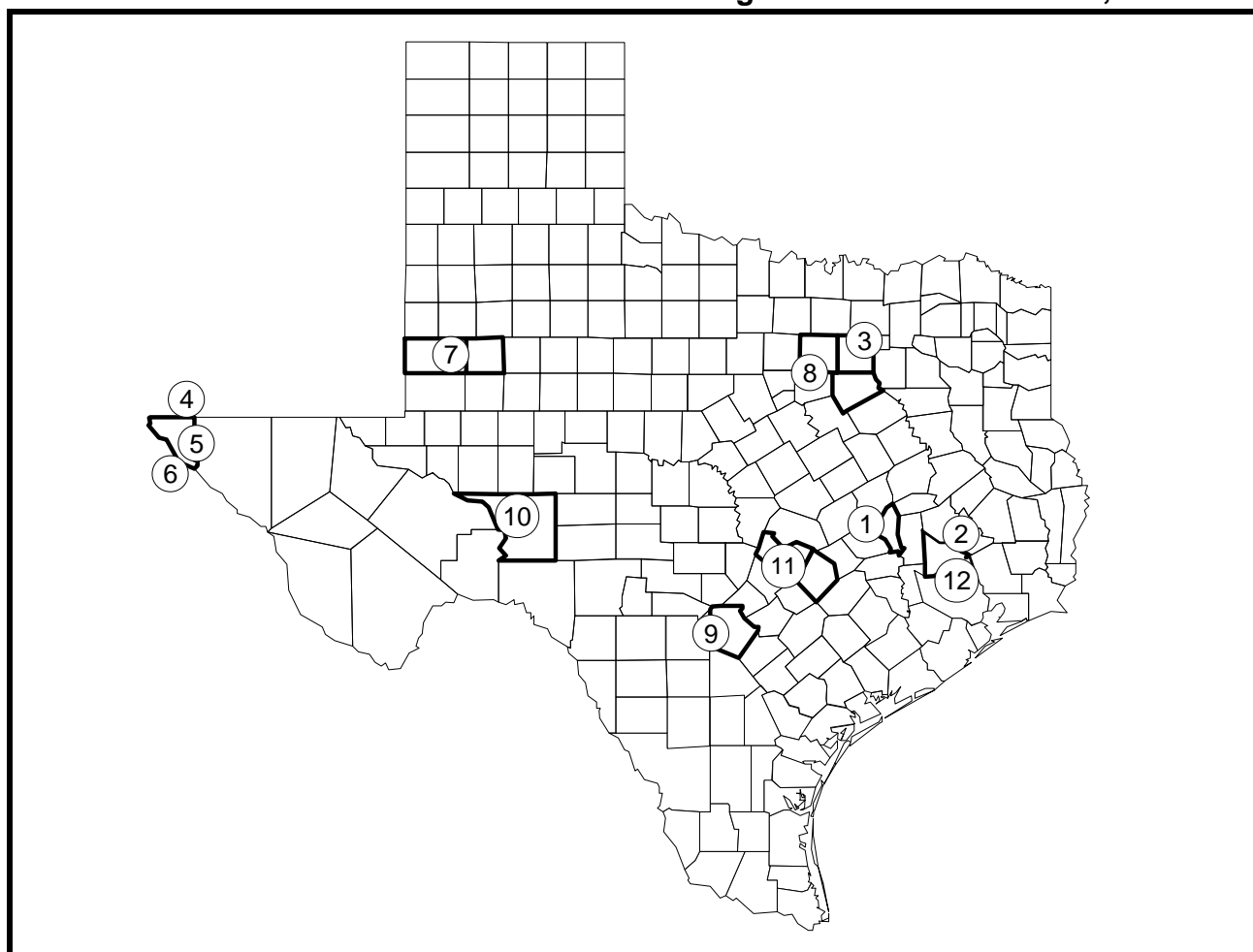




Birth Defect Investigations Conducted in 1997

By the Texas Birth Defects Monitoring Division,
the Health Studies Program,
and/or the Bureau of Epidemiology,
Texas Department of Health

Texas Counties in which Birth Defect Investigations Were Conducted, 1997



Notes: A glossary of birth defects and other terms is found at the end of this document.

Because Texas did not yet have a statewide Birth Defects Registry in 1997, expected rates were calculated using data from the California Birth Defects Monitoring Program (CBDMP) and/or the Metropolitan Atlanta Congenital Defects Program (MACDP).

Introduction

In calendar year 1997, a total of twelve investigations of birth defects clusters were conducted by the Texas Department of Health. Of five initiated in previous years, two were concluded in 1997 (see items 11 and 12). Six of the seven investigations which began in 1997 were still open as of the end of the calendar year, and will continue into 1998 (see items 1, 2, 4, 5, 9, and 10).

One-third of reports investigated (four reports) were related to neural tube defects (See Figure 1). All of these reports of neural tube defects included anencephaly (Items 1, 2, 3, and 12).

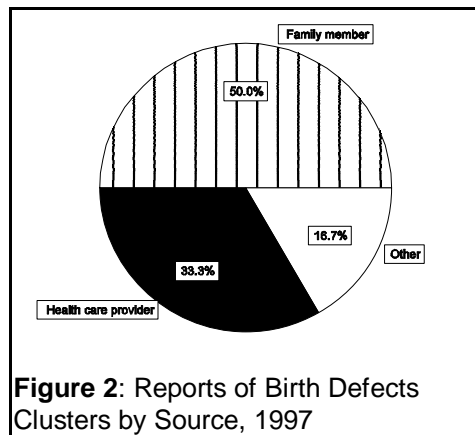


Figure 2: Reports of Birth Defects Clusters by Source, 1997

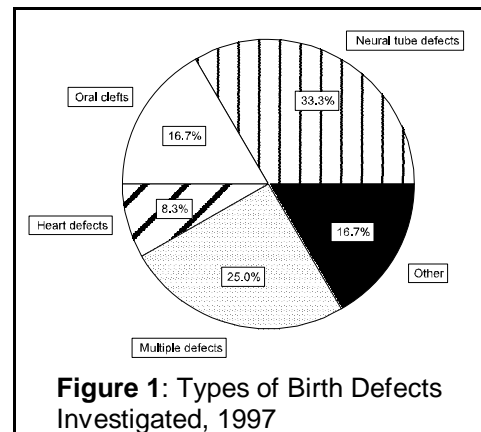


Figure 1: Types of Birth Defects Investigated, 1997

One-fourth of all reports (three reports) investigated in 1997 included multiple birth defects in a specific area (Items 5, 8, and 9).

Reports of suspected or perceived birth defect clusters are come from health care professionals, concerned family members, and others in the community. Figure 2 shows the sources of reports investigated in 1997.

1. BRYAN AND COLLEGE STATION (Brazos County)

Condition of Concern: *Anencephaly.*

Background: A resident of College Station contacted the Texas Department of Health (TDH) with concerns about anencephaly. He stated that 20 anencephalics had been born in his neighborhood. No specific time period of concern was mentioned.

Response: Vital records (birth, fetal death, and death certificates) are being searched to identify all cases of anencephaly delivered to residents of Bryan, College Station, or Brazos County in 1981-1996. This investigation is ongoing.

Duration of Investigation: March - December.
58 person-hours.

2. CONROE (Montgomery County)

Condition of Concern: *Anencephaly.*

Background: The grandparent of a child with anencephaly was concerned that the birth defect might have been related to pollution from a nearby creosoting plant.

Response: Because the plant was a known pollution source, and because of previous community concerns regarding creosoting facilities, the informant's well water is being tested for likely contaminants related to creosoting. This investigation is ongoing.

Duration of Investigation: January - December.
10 person-hours.

3. DALLAS (Dallas County)

Condition of Concern: *Neural tube defects.*

Background: TDH was contacted by a parent about his child's neural tube defect (encephalocele listed at birth in 1992, anencephaly listed on the death certificate). He was concerned that this might have been related to his and his wife's prior lead exposure from a lead smelter in the area.

Response: TDH staff has reviewed medical records provided by the parent, searched vital records for all cases of neural tube defects in the areas closest to the lead smelter between 1990 and 1994, reviewed the medical and scientific literature for evidence of an association between human lead exposure and occurrence of neural tube defects, and examined the data on human and environmental lead levels in the area surrounding the smelter. No excess occurrence of neural tube defects was found. Little evidence was found that prior parental exposure to lead would cause the health problems of concern.

Duration of Investigation: August - December. 26 person-hours.

4. EL PASO (El Paso County)

Condition of Concern: *Biliary atresia.*

Background: A concerned parent reported that six babies with biliary atresia had been born in El Paso since 1992. He was concerned that this was excessive.

Response: Further information is being gathered.

Duration of Investigation: September - December. 3 person-hours.

5. EL PASO (El Paso County)

Condition of Concern: *Multiple defects.*

Background: A physician contacted TDH,

concerned that he was seeing an abnormally high number of children with hypoplastic left heart, various intestinal interruptions, and cancer.

Response: Further information is being gathered.

Duration of Investigation: May - December. 2 person-hours.

6. FABENS (El Paso County)

Condition of Concern: *Heart defects.*

Background: A family physician contacted TDH, concerned that he was seeing an abnormally high number of children with heart defects.

Response: TDH staff visited the physician's office and abstracted medical records for the 114 children of concern. These abstracts were summarized and reviewed by a panel of three pediatric cardiologists. All three agreed that it did not appear that there were an excessive number of serious heart defects among that patient population.

Duration of Investigation: July 1996 - September 1997. 129 person-hours in 1997; 147 person-hours total.

7. GAINES AND DAWSON COUNTIES

Conditions of Concern: *Cleft lip and cleft palate.*

Background: In March of 1995, TDH was contacted by a parent concerned about a potential excess of cleft lip and palate in Gaines County. Three cases were reported. Based on CBDMP rates, this was 16.0 times the number of cases expected and statistically significant. Reports of a possible excess in neighboring Dawson County resulted in expanding the investigation to include it as well.

Response: TDH is conducting an investigation to (a) confirm reported cases and (b) ascertain and confirm any unreported cases for the county. The investigation is ongoing.

Duration of Investigation: March 1995 - December 1997. 10 person-hours in 1997; 46 person-hours total.

8. GRAND PRAIRIE (Dallas, Ellis, Tarrant Counties)

Condition of Concern: *Multiple defects.*

Background: A concerned parent contacted TDH regarding a perceived excess of miscarriages and birth defects in a subdivision of Grand Prairie from 1994 to 1996. The reported birth defects included one case of Klinefelter syndrome and two cases of Down syndrome. Making meaningful conclusions from the one case of Klinefelter syndrome is difficult. The two Down syndrome cases were fewer than the 2.69 cases that would have been expected in Grand Prairie as a whole, based on CBDMP rates.

Response: No further action regarding the reported birth defects is required. TDH is comparing all birth defects found in birth certificates, fetal death certificates, and death certificates for Grand Prairie in 1994-1996 with the number expected from the State of Texas. TDH will also respond concerning the miscarriages. The investigation is ongoing.

Duration of Investigation: August 1996 - December 1997. 41 person-hours in 1997; 45 person-hours total.

9. KELLY AIR FORCE BASE (Bexar County)

Condition of Concern: *Multiple defects.*

Background: TDH was requested by the federal Agency for Toxic Substances and Disease Registry (a U.S. Public Health Service agency) to conduct a public health assessment in three zip codes around Kelly Air Force Base.

Adverse reproductive outcomes were of interest, including birth defects, low birth weight and miscarriages.

Response: Since the Texas Birth Defects Registry only began coverage of San Antonio in 1997, TDH staff examined vital records from 1990-1995 for the three zip code area. This is being compared with rates derived from the same type of vital record for the entire State of Texas. The investigation is ongoing.

Duration of Investigation: October - December. 339 person-hours (for all reproductive outcomes).

10. OZONA (Crockett County)

Conditions of Concern: *Cleft lip and cleft palate.*

Background: A health care provider notified TDH that she had seen three cases of cleft lip and palate born in Ozona during 1994. Further information gathering revealed that two cases were born to mothers actually resident in Ozona. Since the town has a low birth rate, this was roughly 189 times what we would have expected based on rates from the MACDP, and was statistically significant.

Response: TDH is conducting an investigation to (a) confirm reported cases and (b) ascertain and confirm any unreported cases for the county. The investigation is ongoing.

Duration of Investigation: September - December. 15 person-hours.

11. TRAVIS AND BASTROP COUNTIES

Condition of Concern: *Anophthalmia.*

Background: TDH was contacted by a staff member of Early Childhood Intervention about four cases of anophthalmia born from June-October 1996 in Travis and Bastrop Counties. Based on rates from CBDMP, this was 20.2 times the number expected and statistically significant.

Response: TDH conducted an investigation to (a) confirm reported cases and (b) ascertain and confirm any unreported cases for the counties. Four cases were confirmed. This was 20.2 times the number expected, and statistically significant. The informant did not mention any specific concerns of environmental exposures potentially related to these cases. Also, the number of verified cases did not meet our criteria for continuation of the investigation; there were not enough cases to make further investigation productive. No further action is required at this time.

Duration of Investigation: October 1996 - October 1997. 10 person-hours in 1997; 20 person-hours total.

12. THE WOODLANDS (Montgomery Co.)

Condition of Concern: *Anencephaly.*

Background: Concerned parents collected information on potential anencephaly cases in and around The Woodlands for several years. They offered this information to TDH to assist with investigating a possible cluster in the area. Using the information, TDH conducted an investigation to (a) confirm the reported cases and (b) ascertain and confirm any unreported

cases for the area. TDH was able to confirm three cases of anencephaly in The Woodlands from 1990-1994. This was 3.1 times what would have been expected based on rates from vital records for the State of Texas, but was within the limits of random variation. In the same time period in all of Montgomery County, 10 cases were confirmed, or 2.0 times the expected number. This was not statistically significant. When race/ethnic group was considered, the ratio increased to 2.3 times, and became statistically significant.

Response: To update the original investigation, identical methods were used to ascertain and analyze cases delivered in 1995-1996. In that time period, no occurrences of anencephaly were documented in The Woodlands. The four cases that were documented in Montgomery County were 2.2 times the expected number; however, the confidence intervals were wide and included 1.0, thereby failing to reach statistical significance. Occurrence of anencephaly will continue to be monitored by the Texas Birth Defects Registry. No further action is required at this time.

Duration of Investigation: August 1995 - February 1997. 12 person-hours in 1997 (update investigation); 229 person-hours total.

GLOSSARY

Anencephaly:	congenital absence of the skull, with cerebral hemispheres completely missing or reduced to small masses attached to the base of the skull.
Anophthalmia:	absence of one or both eyes, or the presence of vestigial eyes.
Atresia:	imperforation; absence or closure of a normal opening or hollow organ.
Biliary atresia:	obstructed bile ducts.
Cleft lip:	the congenital failure of the maxillary and median nasal processes to fuse, forming a groove or fissure in the lip; also called harelip.
Cleft palate:	the congenital failure of the palate to fuse properly, forming a grooved depression or fissure in the roof of the mouth.
Down syndrome:	the chromosomal abnormality that is characterized by moderate-to-severe mental retardation, sloping forehead, small ear canals, flat-bridged nose, and short fingers and toes. Due to an extra chromosome 21; one type of trisomy. Also called trisomy 21.
Encephalocele:	hernia of the brain, manifested by protrusion of brain substance through a congenital or traumatic opening of the skull.
Klinefelter syndrome:	an abnormal condition in a male characterized by one Y chromosome and two or three X chromosomes, small testicles and infertility.
Neural tube defects: (NTDs)	a general term for a number of defects that are presumed to have a common origin in failure of the neural tube to develop properly during the embryonic stage. The major conditions include anencephaly, spina bifida, and encephalocele.
Person-hour:	the equivalent of one person working for one hour; thus three person-hours can be derived from three people working one hour each, or one person working three hours, or any other combination.
Spina bifida:	a developmental anomaly characterized by defective closure of the bony encasement of the spinal cord, through which the cord and meninges may or may not protrude.
Vital records:	legally required records of major life events, filed with TDH. For birth defect investigations, the following vital records are commonly searched: birth certificates, fetal death certificates, and death certificates.

For copies of this report or for further information, please call the Texas Birth Defects Monitoring Division, Texas Department of Health at (512) 458-7232.